RECREATION NOVA SCOTIA 2026 ANNUAL CONFERENCE · TRURO

World Litter Run

Turning litter pickups into
data the world can act on

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Every piece of litter has a story. Most of them end in a bag.

We built a way to keep the story.

01

Why plogging needs data

Effort that disappears cannot change anything

THE PROBLEM

A pickup vanishes the moment it is bagged

- **No record of what was found**
  Brand, material, place and time are gone.
- **No accountability**
  Producers never see what ends up on the ground.
- **Invisible volunteers**
  Hours of effort with nothing to show sponsors or councils.

WORLD LITTER RUN

How the platform works



Ploggers walk
Photograph what they pick up

Taggers identify
Item, material and brand

Litterpedia
A living index of what we find

Sponsors fund crews
Sweatanthropy

Charities receive
Verified monthly donations

RIGHT NOW

The platform, live

92
People joined
Ploggers, taggers, companies, charities

15
Events held
Community cleanups on the calendar

69
Event sign-ups

2,198
Photos approved

4,141
Litter items identified

3,231kg
Weight collected

Pulled from the World Litter Run database the moment this deck opened.

02

Why I started picking

A daily walk, a Stoic, and a Father's Day present

I walked my son to daycare every day. Past the same garbage. And did nothing.

“

You can also commit injustice by doing nothing.

— Marcus Aurelius, Meditations 9.5

That year I asked for a garbage picker for Father's Day.



Most mornings look like this



Rain or shine



The dogs come too

SINCE THEN

1,300+
Pounds of litter picked

2.5
Years of daily picking

2
Rowan's age when he started

Plus more community cleanups than I have counted.

Rowan started at two


His first bag


Our weekly haul

THE RIPPLE

It spreads on its own

- **My son Rowan, at two**
  His own picker, gifted by a neighbour
- **Another dad and his son on our street**
  Then the grandparents
- **Three more families at our park**
- **Friends in Toronto**
- **Now I get texts of people's hauls**
  Regularly, unprompted



A neighbour and his son, now out daily

At the park, kids run over to pick up garbage and show me.

At Rowan's daycare too. Kids want to contribute, and this is a simple, accessible way to let them take care of the planet.

Then the beach. Then the daycare parents.



Beach cleanup with Rowan



Earth Day cleanup with the daycare parents

FROM PICKER TO PLATFORM

Building World Litter Run

- **Luke MacDonald's vision, built into a platform**
  Log litter, see impact, keep going
- **Companies sponsor ploggers monthly**
  Raised funds go to local charities
- **Plogging becomes funds for doing good**
  Sweatanthropy

Logging the litter after every walk was the tedious part.

So I bought a camera, wrote its firmware,
and taught my phone to name what I pick up.

03

LitterCam

A camera on the picker that counts for you



What if the data collected itself?

THE HARDWARE

A sensor, not a brain

- **A 21-gram camera on the picker**
  ESP32 and a 3 MP sensor, custom firmware
- **Streams to the phone in your pocket**
  Its own Wi-Fi, about two frames a second
- **Zero buttons during a walk**
  Pairs once, reconnects itself

HOW IT WORKS

Picker to Litterpedia



Camera streams
Every frame saved with GPS

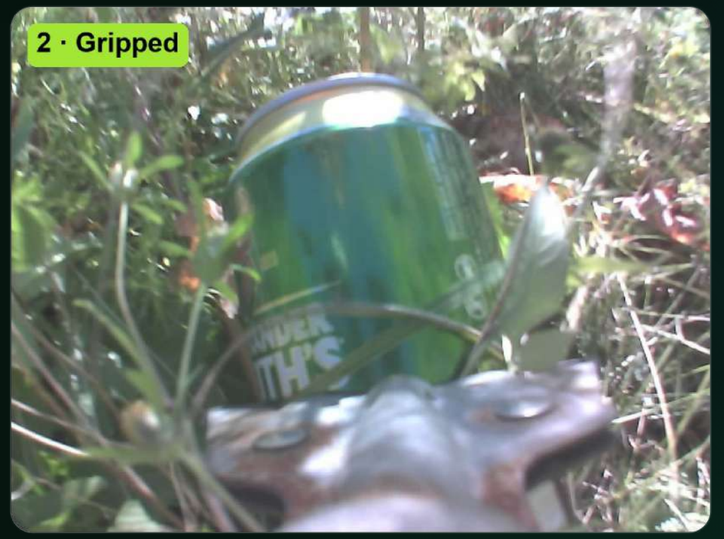
Phone recognises litter
On-device, as you walk

Bag seen, pickup counted
The collection bag is the trigger

Reviewed, filmed, uploaded
Into World Litter Run for taggers

One can, four frames









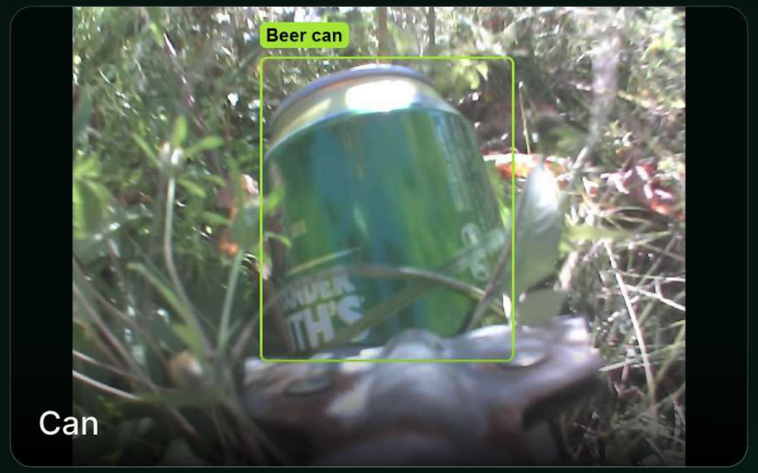
THE MODEL

A frozen eye and small, fast heads

- **A frozen image encoder looks at ten windows per frame**
  The whole frame plus a 3×3 grid of tiles
- **Small networks on top name the item**
  16 litter classes from the Litterpedia, plus one that spots the bag
- **Three seeds, averaged**
  Because the "best" single run was the worst on the next walk

Six of the sixteen classes













ON WALKS IT HAD NEVER SEEN

Honest numbers

94%

Items detected

236 of 251 across 8 unseen walks

66%

Named correctly

Typing is the hard part

13+

Field walks

803 verified items reviewed by hand

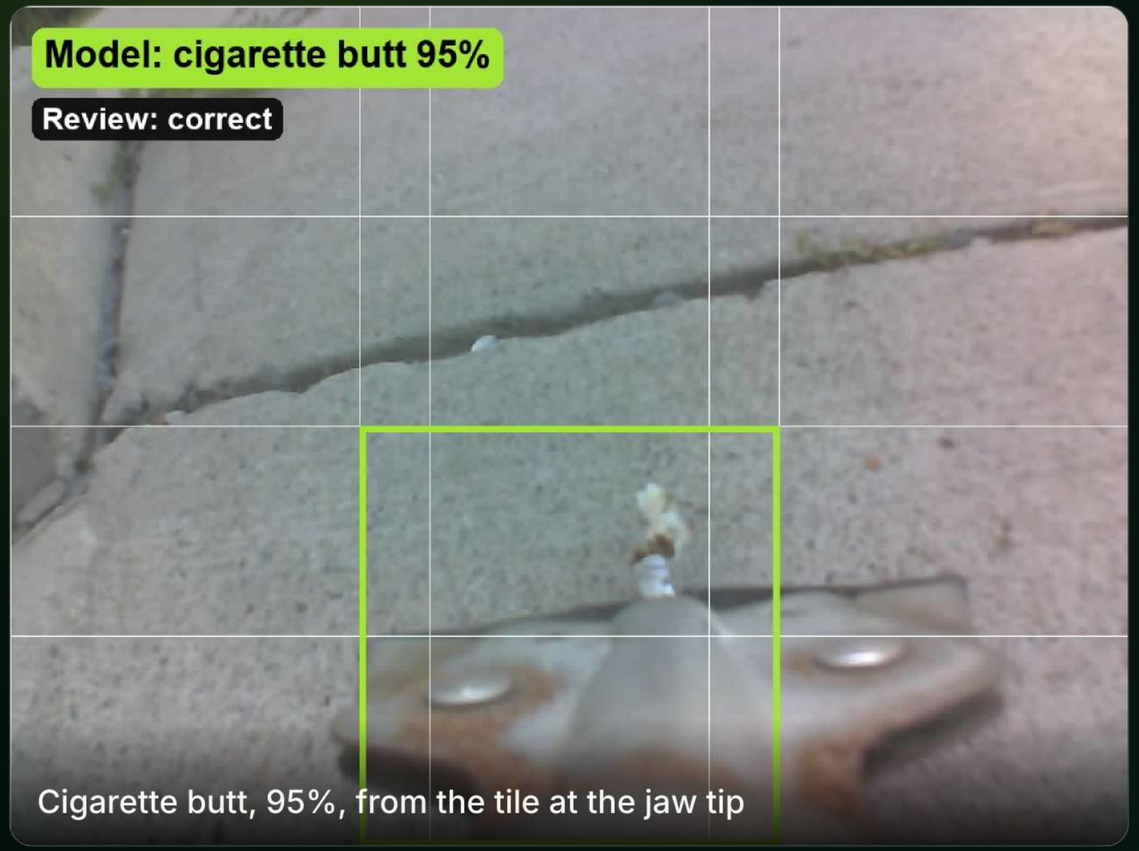
36

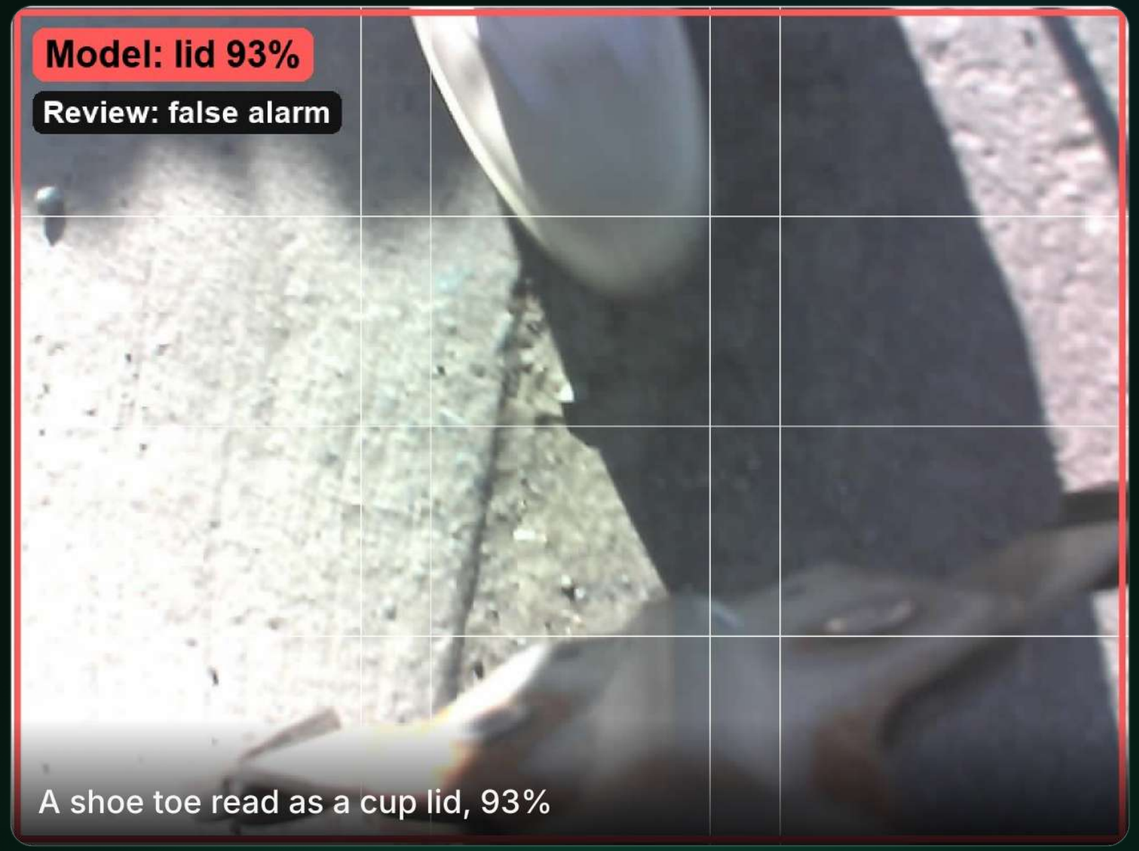
Model rounds

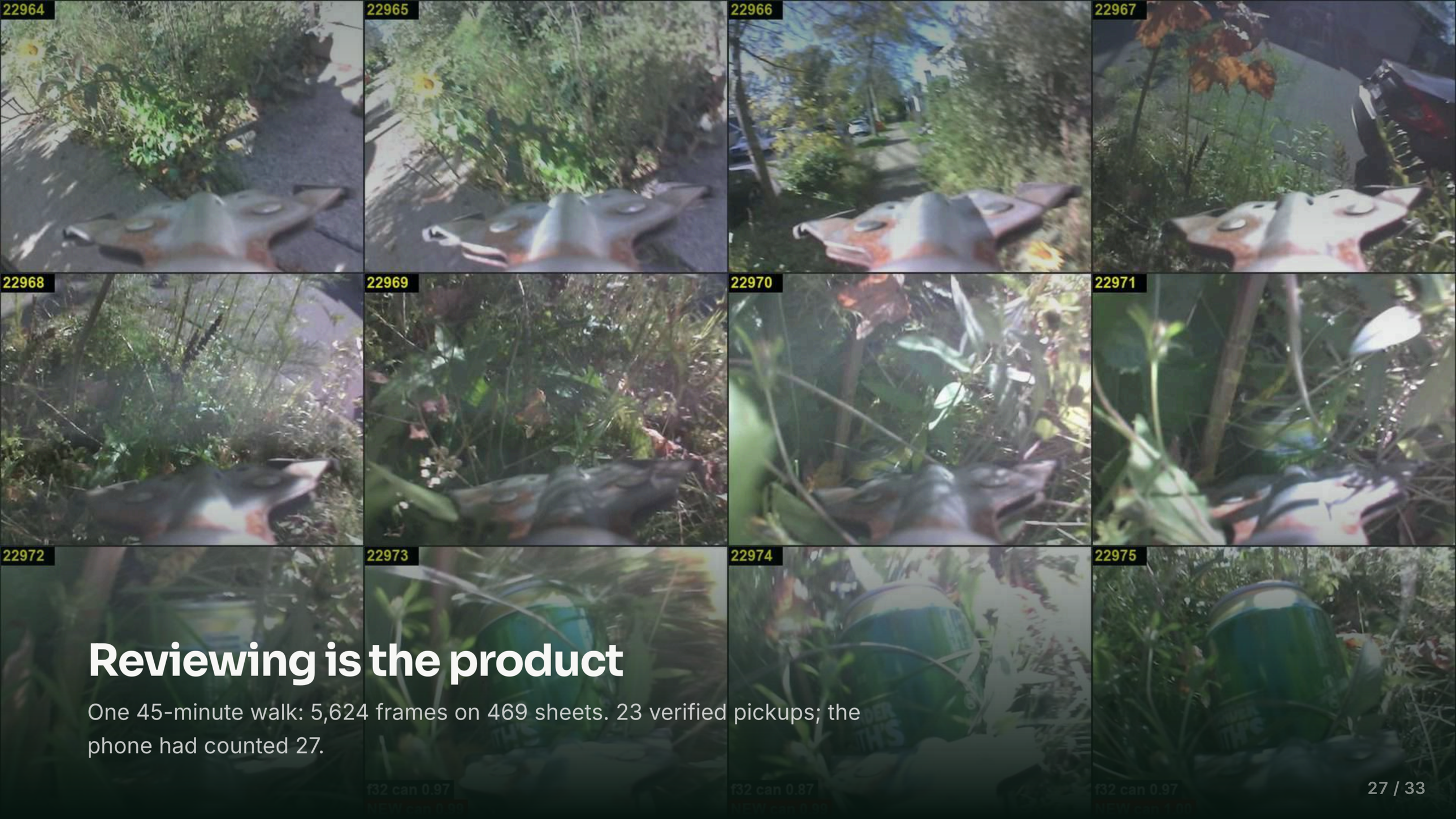
Each scored on walks it never saw

Threshold 0.65. It is a classifier, not a detector, so there is no mAP to quote.

A right call and a false alarm







Reviewing is the product

One 45-minute walk: 5,624 frames on 469 sheets. 23 verified pickups; the phone had counted 27.

What surprised us

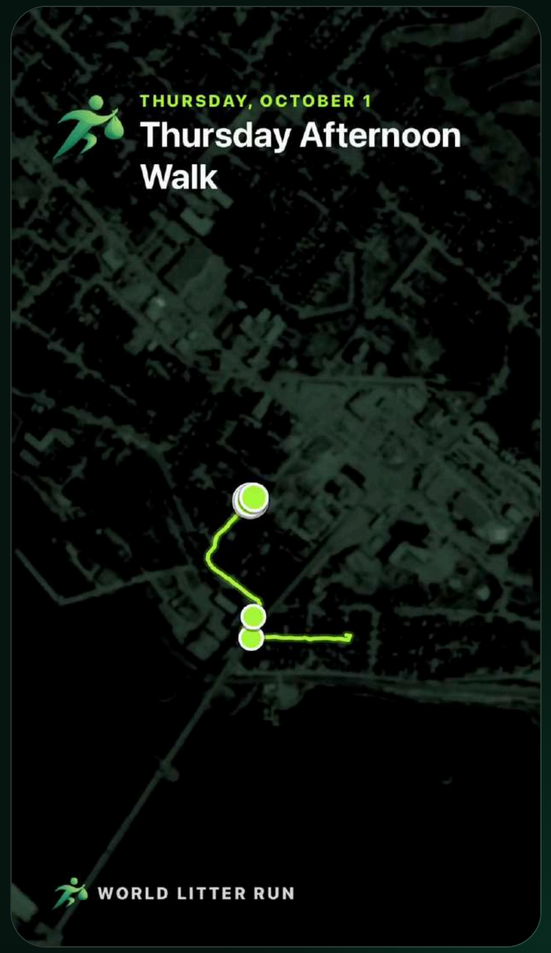
WRONG

- Shoes, a clog and a hand over the lens all looked like "the bag"
- Teaching it clear iced cups caused false alarms on other walks
- Doubling the resolution halved the frame rate for no gain

LEARNED

- Reviewing is the product
- The right negatives beat more data
- Count encounters, not frames

A walk, as LitterCam saw it



Rendered on the phone from one afternoon walk on 1 October 2026. Silent; turn on captions (CC) for a description of each card. Video plays in the live presentation.

04

What's next

Where this goes

- **A tech-enabled picker**
  Logs every pickup to World Litter Run in real time
- **Global leaderboards and awards**
  For the top pickers anywhere
- **A Spogomi League in Halifax**
  The Japanese sport of litter picking, to make it mainstream
- **Better typing, weight, open data**
  Brand and material trends councils and producers can act on

A humble way to serve your community, and an answer to the doom and gloom.

A simple local action with a positive ripple. I will keep picking until we have eradicated litter.

WORLD LITTER RUN

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Come plog with us

Every walk teaches the model. Every tag
is a human saying "yes, that was there."

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